## Version with Markings to Show Changes Made

- 1. (Amended) A liquid composition, [preparable] <u>prepared</u> by copolymerizing olefinically unsaturated compounds in <u>a reaction medium of</u> reactive diluents for thermally curable multisubstance mixtures. [as reaction medium.]
- 2. (Amended) A homopolymer or copolymer of olefinically unsaturated compounds, [preparable] <u>prepared</u> by copolymerizing the compounds in <u>a reaction medium of reactive diluents</u> for thermally curable multiubstance mixtures. [as reaction medium.]
- 3. (Amended) A liquid composition [as claimed in] of claim 1 [or homopolymer or copolymer as claimed in claim 2,] wherein compounds selected from the group consisting polyols,[and/or] epoxides and mixtures thereof are used as reactive diluents.
- 4. (Amended) A liquid composition [or a homopolymer or copolymer as claimed in] of claim 3, wherein the polyols used comprise
- (iii) hyperbranched compounds containing a tetrafunctional central group derived from compounds selected from the group consisting of ditrimethylolpropane, diglycerol, [and/or] ditrimethylolethane and mixtures thereof or a tetrafunctional central group of the general formula I

$$C[-A_q-X-]_m[-A_r-x-]_n[-A_s-X-]_o[A_t-X-]_p$$
 (I),

in which the indices and variables have the following definitions:

m + n + o + p = 4; where

m is an integer from 1 to 3, and

n, o and p are 0 or an integer from 1 to 3;

q, r, s and t are an integer from I to 5, where  $q \ge r$ , s, t, [especially q > r, s, t];

X is -0-, -S- or -NH-;

A is -CR<sub>2</sub>-; where

R is -H, -F, -Cl, -Br, -CN, -NO<sub>2</sub>

C<sub>1</sub>-C<sub>3</sub> alkyl or haloalkyl or C<sub>1</sub>-C<sub>3</sub> alkoxy radical or, if q, r, s and/or t are at least 2, R is selected from the group consisting of a C<sub>2</sub>-C<sub>4</sub> alkanediyl, [and/or] oxaalkanediyl radical having 2 to 5 carbon atoms, [and/or] an oxygen atom -O- which bridges from 3 to 5 carbon atoms of the radical -A- and mixtures thereof;

(ii) cyclic and/or acyclic C<sub>9</sub>-C<sub>16</sub> alkanes

functionalized with at least[o] two hydroxyl groups or at least one hydroxyl group and at least one thiol group;

(iii) polyols [obtainable] <u>obtained</u> by hydroformylating oligomers of the formula (III),

$$[R^3R^4C=[=CH-R^2-CH=]_v=CR^5R^6]$$
  $R^3R^4C=[CH-R^2-CH]_v=CR^5R^6$  (III),

in which  $R^2$  is -(-CH<sub>2</sub>-)<sub>w</sub>-,

in which the index w is an integer from 1 to 6, or

W

in which w is  $-CH_2$ — or an oxygen atom;

R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> independently of one another are hydrogen atoms or alkyl; and the index v is an integer from 1 to 15.

- 5. (Amended) A liquid composition [or a homopolymer or copolymer as claimed in] of claim 4, wherein
  - the polyols used comprise
  - (i) hyperbranched compound [obtainable] <u>obtained</u> by reacting 2,2bishydroxymethylbutane-1,4-diol with phthalic anhydride and then reacting the resultant intermediate with glycidyl esters of tertiary, highly branched, saturated monocarboxylic acids,
  - the polyols (ii) used comprise dialkyloctanediols, [especially diethyl- octanediols,] and
  - the polyols (iii) used comprise hydroformylated and hydrogenated oligomers, [obtainable] obtained by metathesis from acyclic monoolefins and cyclic monoolefins, hydroformylation of the -resultant oligomers and subsequent hydrogenation, the cyclic monoolefin used comprising cyclopentene and the acyclic monoolefins used comprising hydrocarbon mixtures obtained in petroleum processing by cracking (C<sub>5</sub> cut), and the polyols (iii) having a hydroxyl number (OHN) of from 200 to 60, [in particular from 250 to 450,] a number-average molecular weight M<sub>n</sub>, of from 400 to 1 000, [in particular from 400 to 600,] a mass-average molecular weight M<sub>w</sub>, in the range from 600 to 2 000, [in particular from 600 to 1100,] and a polydispersity M<sub>n</sub>/M<sub>w</sub>, from 1.4 to 3.[, in particular from 1.7 to 1.9.]
- 6. (Amended) A liquid composition [or a homopolymer or copolymer as claimed in] of claim 3, wherein the reactive diluents containing epoxide groups comprise
- (iv) glycidyl ethers of polyols or polyphenols such as glycerol, diglycerol, glucitol, erythritol, pentaerythritol, dipentaerythritol, trimethylolpropane.

trimethylolethane, ditrimethylolpropane, ditrimethylolethane, tetrakis(2-hydroxyethyl)ethane, tetrakis(3-hydroxypropyl)methane, the tetraols II1 to II10:

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HO- (-CH<sub>2</sub>-)<sub>2</sub>-C (-CH<sub>2</sub>-OH) 3,
(II1)
HO - (- CH<sub>2</sub>-)<sub>3</sub>C (- CH<sub>-2</sub> - OH)<sub>3</sub>,
(112)
HO- (-CH<sub>2</sub>-)<sub>4</sub>-C (-CH<sub>2</sub>-OH)<sub>3</sub>,
(II3)
HO- (-CH<sub>2</sub>-) <sub>5</sub>-C (-CH--OH)<sub>3</sub>,
(114)
[HO- (-CH<sub>2</sub>-)<sub>2</sub>-]<sub>2</sub>C(CH<sub>2</sub>-OH)<sub>2</sub>,
(115)
[HO- (-CH<sub>2</sub>-)<sub>2</sub>-]<sub>3</sub>C-CH<sub>2</sub>-OH,
(116)
HO-(-CH_{2}-)_{3}-C[-(-CH_{2}-)_{2}-OH]_{3},
(117)
HO- (-CH_2-)_3-C[- (-CH_2-)_2-OH]_2 (-CH_2-OH)
(118)
HO-(-CH_2-)_4-C(-CH_2-OH)[-(-CH_2-)_2-OH][-(-CH_2-)_3-OH] or
(119)
HO- (-CH<sub>2</sub>-)<sub>5</sub>-C (-CH<sub>2</sub>-OH)[- (-CH<sub>2</sub>-)<sub>4</sub>-OH] 2
(1110);
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the polyols (i), (ii) and (iii), pyrocatechol, resorcinol, hydroquinone, pyrogallol, phloroglucinol, (p-hydroxy- phenyl)phloroglucinol, 5-(7-hydroxynaphth-l-yl)pyrogallol, bisphenol F, bisphenol A or novolaks;

- (v) low molecular mass epoxy resins or oligomers which contain glycidylcontaining monomers (A6) in copolymerized form;
- (vi) glycidyl esters of Versatic® acid;
- (vii) epoxy resin esters of saturated and unsaturated fatty acids; [(epoxidized oils); ]

and[/or]

- (viii) epoxidized triglycerides of natural oils and esters, and mixtures thereof.
- 7. (Amended) A liquid composition [as claimed in, any of claims 1 or 3 to 6 or a homopolymer or copolymer as claimed in any of claims 2 to 6, preparable] prepared by homopolymerization or copolymerization of olefinically unsaturated monomers in a Taylor reactor having an external reactor wall located within which there is a concentrically or eccentrically disposed rotor, a reactor floor and a reactor lid, which together define the annular reactor volume, at least one means for metered addition of reactants, and a means for the discharge of product, where the reactor wall and/or the rotor are or is geometrically designed in such a way that the conditions for Taylor vortex flow are met over substantially the entire reactor length in the reactor volume, [i.e.] in such a way that the annular gap broadens in the direction of flow traversal.
- 8. (Amended) A process for preparing a liquid composition [or a homopolymer or copolymer of olefinically unsaturated compounds] by free-

radical copolymerization in a liquid reaction medium, which comprises using <u>, as the reaction medium</u>, reactive diluents for thermally curable multisubstance mixtures. [as the reaction medium.]

- 9. (Amended) The process as claimed in claim 8, wherein a fraction of the reactive diluents is modified after the copolymerization with olefinically unsaturated compounds, [especially with monomers (A2), (A5) and/or (A6),] so that the resulting liquid composition is curable <u>by means selected from</u> [both] thermal[ly], [and] by actinic light, and[/or] electron beams, and mixtures thereof.
- 10. (Amended) The process as claimed in claim 8 [or 9], conducted in a Taylor reactor having an external' reactor wall located within which there is a concentrically or eccentrically disposed rotor, a reactor floor and a reactor lid, which together define the annular reactor volume, at least one means for metered addition of reactants, and a means for the discharge of product, where the reactor wall and/or the rotor are or is geometrically designed in such a way that the conditions for Taylor vortex flow are met over substantially the entire reactor length in the reactor volume, i.e. in such a way that the annular gap broadens in the direction of flow traversal.

## **REMARKS**

Upon entry of the present amendment claims 1-10 are pending in the application. Claim 11 has been canceled without prejudice. Claims 1-10 have been amended in accordance with the requirements of U.S. patent practice. New claims 12-30 add no new matter, as these claims contain subject matter deleted from the amended claims. Applicants respectfully request entry of the preliminary amendment.

Respectfully Submitted,

Anne Gerry Sabourin Registration No. 33,772

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BASF Corporation
26701 Telegraph Road
Southfield, Michigan 48034-2442
(248)-948-2021